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19,000 km. per second, or about 20,000 times the speed of a rifle-bullet. The energy of motion of an ounce of helium moving with the speed of the $\alpha$-particle is equivalent to 10,000 tons of solid shot projected with a velocity of 1 km. per second.

Sir Ernest Rutherford found from the scintillations on a zinc sulphide screen that when an $\alpha$-particle strikes an atom of nitrogen the latter is broken down and a long range atom, which is not nitrogen, arises from the collision. This atom is held to be a charged atom of hydrogen or an atom of mass 2. Sir Ernest says that taking into account the great energy of the particle, the close collision of an $\alpha$-particle with a light atom seems to be the most likely agency to promote its disruption. Considering the enormous intensity of the forces brought into play in such collisions, it is not so much a matter of remark that the nitrogen atom should suffer disintegration as that the $\alpha$-particle itself escapes disruption. The results, as a whole, suggest that if $\alpha$-particles, or similar projectiles of still greater energy, were available for experiment, we might expect to break down the nucleus structure of many of the lighter atoms.

## *INTERNATIONAL SCIENCE AND THE WAR*

An appeal has been addressed to the members of the academies of the allied nations and of the United States by 177 members of the academies of neutral nations—Holland, Norway, Sweden, Denmark, Finland and Switzerland—represented in the International Association of Academies, the opening and concluding paragraphs of which are as follows:

In the autumn of 1813, when for years a most bitter war had been raging between France and England, the English chemist Humphry Davy set out for Italy via Paris. His biographer relates what follows about his experiences in the French capital: "Nothing could exceed the cordiality and warmth of Davy's reception by the French savants. On Nov. 2nd he attended a sitting of the First Class of the Institute and was placed on the right hand of the President, who announced to the meeting that it was honoured by the presence of 'le chevalier Davy.' Each day saw some reception or entertainment in his honour. . . . On Dec. 13th, 1913 he was with practical unanimity elected a corresponding member of the First Class of the Institute."

On October 2, 1918, when a most bitter war raging between France and Germany for four years had practically come to an end, it is stated in a meeting of the French Academié des Science, that "elle a été unanime à déclarer que les relations personnelles sont pour longtemps impossibles entre les savants des pays alliés et ceux des empires centraux," so that "nous devons abandonner les anciennes associations internationales, et en créer de nouvelles entre alliés avec le concours eventuél des neutres."

Whence this painful contrast? We should rather have expected the opposite, even without indulging illusions with regard to the progress of mankind during a hundred years. For there seems to be more room for generosity when the war's misery is past than when it is still raging; more too towards a defeated enemy than towards one who is still to be feared.

. . . . . . .

Summing up what precedes we ask you earnestly and urgently: Recover your former selves. Recover the high scientific point of view which, on his deathbed, made Ampère say to a fellow worker: "il ne doit être question entre nous que de ce qui est eternel!" Once more: we understand how your attention of late has been monopolized by what is temporal and transitory. But now, you more than all the others, are called upon to find again the way to what is eternal. You possess the inclination for objective thought, the wide range of vision, the discretion, the habit of self-criticism. Of you we had expected the first step for the restoration of lacerated Europe. We call on you for cooperation in order to prevent science from becoming divided, for the first time and for an indefinite period, into hostile political camps.

## *SCIENTIFIC ITEMS*

WE record with regret the death of Charles Henry Hitchcock, for forty years professor of geology at Dartmouth College.

DR. SIMON FLEXNER, director of the laboratories of the Rockefeller Institute for Medical Research, Dr. Theodore W. Richards, professor of chemistry at Harvard University, and director of the Wolcott Gibbs Memorial Laboratory, and Dr. R. W. Wood, professor of physics in the Johns Hopkins University, have been elected foreign members of the Royal Society of London.

DR. FRANK SCHLESINGER, of the Allegheny Observatory, was elected president of the American Astronomical Society at the recent Ann Arbor meeting. Dr. Schlesinger succeeds the late Edward C. Pickering, who for many years in succession had been elected to this office.—At the October meeting of the executive board of the National Research Council Professor Vernon Kellogg, of Stanford University, was elected executive secretary of the council.

ANNOUNCEMENT is made that Mr. John D. Rockefeller has added $10,000,000 to his previous endowment of the Rockefeller Institute for Medical Research. This gift, the largest made by Mr. Rockefeller at one time to the institution, is to meet rapidly growing needs in its many lines of research and in making new knowledge available in the protection of the public health and in the improved treatment of disease and injury.